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IN THE CLAIMS

1.-24. (canceled)

25. (currently amended) An implantable medical device (IMD) powered by a battery for delivering a therapy to a patient dependent upon a physiologic condition of a patient comprising:

a sensor adapted to couple to human tissue for developing a signal related to a physiologic status of said tissue;

a signal processor that processes the sense signal comprising a plurality of self-timed logic elements formed into a chain that receives the signal at an input thereof, processes the signal, and provides the processed signal at an output after a self-timed logic propagation delay wherein said processor is devoid of a crystal oscillator;

an operating system embodied in at least one integrated circuit formed of self-timed logic circuits that receives the processed signal and generates a therapy trigger signal; and

therapy delivery means for delivering the therapy upon receipt of a therapy delivery trigger signal, wherein said therapy delivery means operate independently from said sensor and said signal processor.

26. (previously presented) An IMD according to claim 25, wherein the sensor comprises sense electrodes to sense an electrical signal of a body organ or muscle.

27. (previously presented) An IMD according to claim 25, wherein the sensor comprises sense electrodes to sense a cardiac signal.

28. (previously presented) An IMD according to claim 25, wherein the sensor comprises a physiologic sensor that senses a condition or state of the body from

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among the group comprising: a physical activity metric, a blood pressure metric, a blood temperature metric, a body temperature metric, a blood gas concentration metric, a blood pH metric.

29. (previously presented) An IMD according to claim 25, wherein the IMD comprises one of: an implantable physiologic monitor, a deep-brain stimulator, a spinal cord stimulator, a nerve tissue stimulator, a diaphragm stimulator, an implantable cardioverter-defibrillator, a single-chamber implantable cardiac pacemaker, a dual-chamber cardiac pacemaker, a bi-chamber cardiac pacemaker, a cardiac resynchronization therapy delivery device, a multi-site cardiac pacing system.
30. (previously presented) An IMD according to claim 25, wherein the IMD comprises one of an implantable intra-cardiac pressure monitor and a leadless subcutaneous monitor.
31. (currently amended) An IMD according to claim 25, further comprising a telemetry circuit for wirelessly communicating an operating parameter of said IMD with a remote processor-based circuit.
32. (currently amended) An IMD according to claim 25, further comprising a memory activation means for causing storage of at least a portion of a temporal portion of the physiologic sense signal.
33. (previously presented) An IMD according to claim 25, further comprising a memory structure means coupled to the processor for recording at least one of: a temporal portion of the signal and the physiologic status.
34. (previously presented) An IMD according to claim 25, wherein the processed physiologic signal relates at least in part to one of:

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an acute episode of myocardial ischemia, a chronic episode of myocardial ischemia, an arrhythmia, an elevated temperature, a reduced temperature, a change in cardiac output, a change in a blood gas metric.